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PCT/JP2003/015175

Translation

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY
(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference SUN-005	FOR FURTHER ACTION See Form PCT/IPEA/416	
International application No. PCT/JP2003/015175	International filing date (*day/month/year*) 27 November 2003 (27.11.2003)	Priority date (*day/month/year*) 30 January 2003 (30.01.2003)
International Patent Classification (IPC) or national classification and IPC G06F 3/02, H01H 11/00		
Applicant SUNARROW LTD.		

1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 6 sheets, including this cover sheet.

3. This report is also accompanied by ANNEXES, comprising:

   a. ☒ *(sent to the applicant and to the International Bureau)* a total of 10 sheets, as follows:

      ☒ sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).

      ☐ sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.

   b. ☐ *(sent to the International Bureau only)* a total of (indicate type and number of electronic carrier(s)) _____, containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).

4. This report contains indications relating to the following items:

   ☒ Box No. I Basis of the report
   ☐ Box No. II Priority
   ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
   ☐ Box No. IV Lack of unity of invention
   ☒ Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
   ☐ Box No. VI Certain documents cited
   ☐ Box No. VII Certain defects in the international application
   ☐ Box No. VIII Certain observations on the international application

Date of submission of the demand	Date of completion of this report
12 August 2004 (12.08.2004)	18 April 2005 (18.04.2005)
Name and mailing address of the IPEA/JP Facsimile No.	Authorized officer Telephone No.

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.
PCT/JP2003/015175

Box No. I Basis of the report

1. With regard to the **language**, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ This report is based on translations from the original language into the following language _____, which is language of a translation furnished for the purpose of:

☐ international search (under Rules 12.3 and 23.1(b))

☐ publication of the international application (under Rule 12.4)

☐ international preliminary examination (under Rules 55.2 and/or 55.3)

2. With regard to the **elements** of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:

☐ The international application as originally filed/furnished

☒ the description:

pages 1, 4-11, as originally filed/furnished

pages* 3/1 received by this Authority on 10 December 2004 (10.12.2004)

pages* 2, 2/1, 3, 12, 13 received by this Authority on 24 March 2005 (24.03.2005)

☒ the claims:

pages _____, as originally filed/furnished

pages* _____, as amended (together with any statement) under Article 19

pages* 5-15 received by this Authority on 24 March 2005 (24.03.2005)

pages* _____ received by this Authority on _____

☒ the drawings:

pages 1-10, as originally filed/furnished

pages* _____ received by this Authority on _____

pages* _____ received by this Authority on _____

☐ a sequence listing and/or any related table(s) – see Supplemental Box Relating to Sequence Listing.

3. ☒ The amendments have resulted in the cancellation of:

☐ the description, pages _____

☒ the claims, Nos. 1-4

☐ the drawings, sheets/figs _____

☐ the sequence listing *(specify)*: _____

☐ any table(s) related to sequence listing *(specify)*: _____

4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

☐ the description, pages _____

☐ the claims, Nos. _____

☐ the drawings, sheets/figs _____

☐ the sequence listing *(specify)*: _____

☐ any table(s) related to sequence listing *(specify)*: _____

* *If item 4 applies, some or all of those sheets may be marked "superseded."*

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.
PCT/JP 03/15175

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	5-15	YES
	Claims		NO
Inventive step (IS)	Claims		YES
	Claims	5-15	NO
Industrial applicability (IA)	Claims	5-15	YES
	Claims		NO

2. Citations and explanations

Document 1: JP 10-106379 A (Kunigami Seiki Kogyo Kabushiki Kaisha), 24 April 1998, entire text, all drawings

Document 2: JP 58-201212 A (Koyo Steel Kabushiki Kaisha), 24 November 1983, entire text, all drawings

Document 3: JP 2002-091662 A (Shinetsu Polymer Co.), 29 March 2002, entire text (specifically, refer to paragraphs [0018] to [0027] and [0034]) and fig. 1 to 5

Document 4: JP 10-312726 A (Shinetsu Polymer Co.), 24 November 1998, entire text, all drawings

Document 5: JP 11-156568 A (Sumitomo Heavy Industries, Ltd.), 15 June 1999, entire text, all drawings

Document 6: JP 10-291840 A (Toshiba Glass Kabushiki Kaisha), 04 November 1998, entire text, all drawings

Document 7: JP 06-500275 A (United Distillers PLC), 13 January 1994, entire text, all drawings

Document 8: JP 07-136782 A (Russian Technology Group Ltd. Partnership), 30 May 1995, entire text, all drawings

Document 9: JP 10-508798 A (Electro Scientific

Industries Inc.), 02 September 1998, entire text, all drawings

Document 10: JP 10-029832 A (Ishizuka Glass), 03 February 1998, entire text, all drawings

The inventions that are set forth in claims 5 to 7 do not involve an inventive step in the light of documents 1 to 4, in combination with document 5 (paragraphs [0016] to [0030]) and document 6 (paragraphs [0008] to [0026]), which are cited in the international search report.

Document 1 discloses a keypad which is configured from a flexible material, and a key unit wherein decorative pieces that are formed from a transparent material are mounted upon the key pad in order to form key tops. Meanwhile, document 2 discloses the feature of using a glass material in order to configure transparent decorative pieces; document 3 presents the concept of finalizing the design and layout of the characters or the like for the key tops and thereafter printing the key top characters upon the keys; and document 4 discloses a technique for using a marking laser in order to engrave characters or symbols into the key tops of a key unit that has been configured by integrating a plurality of keys.

Therefore, it would be easy for a person skilled in the art to configure the transparent decorative pieces of a key unit that has been configured in the manner that is disclosed in document 1 from a glass material, as disclosed in document 2, and to engrave the characters last so that it is possible to freely determine the design and layout of the characters, as disclosed in document 3. At that time, it would be easy for a person skilled in the art to engrave the characters or the like on the key tops that are configured from a glass material via a technique for engraving by means of a laser marker, such as that which is disclosed in document 4, or via the glass

engraving technology that is disclosed in document 5 or document 6. In addition, claims 5 to 7 of the present application set forth the invention of a method for the production of key units, wherein engraving is delayed in order to wait for the finalization of the "characters, symbols or the like which are dependent upon the user's language." However, document 3 also discloses the feature of delaying engraving in order to wait for the determination of the design for the characters, symbols, patterns and the like, and the difference between the features in question merely constitutes a simple design change; therefore, there cannot be considered to be a technical difference therebetween.

The inventions that are set forth in claims 8 to 10 do not involve an inventive step in the light of documents 1 and 2, document 5 (paragraphs [0007] and [0016] to [0030]) and document 6 (paragraphs [0008] to [0026]) cited in the international search report, and newly cited documents 7 and 8.

It is common practice to employ a laser beam with a wavelength of approximately 1.06 μm when subjecting the interior of the glass material to three-dimensional engraving, as disclosed in the examples of documents 7 and 8.

The inventions that are set forth in claims 11 to 15 do not involve an inventive step in the light of documents 1, 2 and 4 to 6 in combination with newly cited documents 7 to 10.

It is common practice to employ a laser with a wavelength of 1100 nm or less, which can be focused so as to have a spot diameter of approximately 25 μm, as the laser for engraving a glass material in order to carry out high-precision engraving, as disclosed in the examples of documents 5, 9 and 10 (specifically, refer to paragraphs [0007] and [0027] of document 10). In addition, it is also

common practice to subject a Nd:YAG laser to harmonic conversion in order to obtain a laser with a frequency that is a multiple of the frequency of the original Nd:YAG laser, which is capable of serving as such a laser.